

5 WHAT IS CLAIMED IS:

1. An apparatus for maintaining freshness, comprising:

a water storage unit, with a support unit being installed in the water storage unit and cooling water being contained in the water storage unit under the support unit ;

10 a filtering unit connected to the water storage unit via a drain line, and functioning to remove impurities from water flowing to the filtering unit;

a cooling unit connected to a first end of a water supply branching pipe of the filtering unit so that a part of
15 filtered water is supplied to the cooling unit, the cooling unit functioning to cool the filtered water fed from the filtering unit to a predetermined temperature prior to feeding the cool water to the water storage unit; and

a humidifying unit connected to a second end of the water
20 supply branching pipe of the filtering unit, the humidifying unit functioning to atomize another part of the filtered water fed from the filtering unit prior to feeding the atomized water to the water storage unit.

2. The apparatus according to claim 1, wherein said water storage unit comprises:

a body containing water therein, with a drain hole being provided at a predetermined position of a bottom of the body to be connected to the drain line and a connection hole being provided at a predetermined position of the body to be connected to the cooling unit;

the support unit integrally installed on the body to be parallel to the bottom of the body, the support unit functioning to support an item stored in the body; and

a plurality of humidifying pipes mounted to the body in such a way as to uprightly stand on the bottom of the body, each of the humidifying pipes vertically passing through the support unit such that an upper end of each of the humidifying pipes is positioned above the support unit.

3. The apparatus according to claim 2, wherein each of the humidifying pipes of the water storage unit comprises:

a lower pipe installed on the bottom of the water storage unit to be connected to the humidifying unit;

an upper pipe inserted into the lower pipe;

a locking member installed at a predetermined position of an upper portion of the lower pipe to lock the upper pipe to the lower pipe; and

a spraying part installed at an upper end of the upper

pipe.

4. The apparatus according to claim 2, wherein a seating hole is formed at a center of the support unit of the water storage unit, and a water container is installed in the
5 seating hole.

5. The apparatus according to claim 1, wherein said drain line comprises:

a first drain pipe connected to the water storage unit;

an automatic valve connected to an end of the first drain
10 pipe;

a second drain pipe connected at a first end thereof to the automatic valve and at a second end thereof to the filtering unit;

a water supply pump installed at a predetermined position
15 of the second drain pipe; and

a third drain pipe connected to the automatic valve to discharge water to an outside of the apparatus.

6. The apparatus according to claim 1, wherein said cooling unit comprises:

20 a housing, including:

a water inlet port connected to the first end of the water supply branching pipe of the filtering unit;

a cooling part to cool the water supplied through the water inlet port to the predetermined temperature by a heat exchanger which is installed on a bottom of the cooling part, with a water temperature sensor being installed in the
5 cooling part; and

a water feed unit communicating with the cooling part, and functioning to feed the cool water from the cooling unit to the water storage unit through a cool water supply pipe; and

10 a feed pump mounted on a top wall of the housing to be connected to the water feed unit.

7. The apparatus according to claim 1, wherein said humidifying unit comprises:

a body provided in a housing and connected to the second
15 end of the water supply branching pipe of the filtering unit so that the filtered water from the filtering unit is fed into and stored in the body, with a water level sensor being installed in the body;

an automatic shutoff valve installed between the body and
20 the housing, and actuated in response to a signal output from the water level sensor;

a vibrator mounted to a predetermined position on a bottom of the housing, and functioning to convert water fed from the body into vapor by vibration;

a high-frequency wave generator mounted to a bottom of the vibrator to actuate the vibrator;

a humid air supply channel upwardly and uprightly extending from the bottom of the housing in such a way that
5 the vibrator is positioned at a lower end of the channel;

a coupling pipe to couple the body to the humid air supply channel;

a blower communicating with the humid air supply channel;
and

10 a distributing pipe connected at an end thereof to the housing and at predetermined portions thereof to a plurality of humidifying pipes of the water storage unit.

8. The apparatus according to claim 7, further comprising a water level regulating pipe is provided at a predetermined
15 position in the humid air supply channel of the humidifying unit.

9. The apparatus according to claim 7, further comprising a dehumidifying unit provided in the humidifying unit, and functioning to dehumidify air flowing thereinto by the blower,
20 prior to discharging dehumidified air to the humid air supply channel.

10. The apparatus according to claim 1 or 7, wherein a

plurality of water storage units are connected to each other.

11. The apparatus according to claim 1 or 7, further comprising a cover made of a transparent material and mounted to an upper portion of the water storage unit.

5 12. The apparatus according to claim 1, wherein said water storage unit, the cooling unit, and the humidifying unit are integrated into a single structure.

13. The apparatus according to claim 1, further comprising a dehumidifying unit, in addition to the water
10 storage unit, the cooling unit, the filtering unit, and the humidifying unit.

14. The apparatus according to any one of claims 1, 2, 6, 12 and 13, wherein said cooling unit cools the water contained in the water storage unit to 2°C ~ 6°C.

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